THE OCCURRENCE OF HYBRID ACACIAS.

(By Edwin Cheel, Botanist and Curator of the National Herbarium, New South Wales.)

It has been suggested by several writers that *Acacia Baileyana* F.v.M., commonly known as "Cootamundra Wattle", produces various forms of seedlings in the seed-pan from seed gathered from a single tree. Some of the most noteworthy of these are as follows:

Dr. Cuthbert Hall (1910) "exhibited a hybrid seedling from seed gathered from a cultivated specimen of *Acacia Baileyana*. It had been found that this Acacia when growing near *Acacia decurrens* gave about 20% of hybrids, which differed materially from either parent . . . ".

Mr. A. F. Brown (1919), of Dalton Nursery, Dubbo, "succeeded in growing a wattle which is a cross between *Acacia decurrens* and *Acacia Baileyana*, or between what is commonly known as the black wattle and the Cootamundra wattle. The tree has bloomed since July 15th, and the bloom is likely to remain on the tree for some time yet. One particular virtue of this crossbred variety is its frost-resisting quality. The brilliance of the flower has been much admired."

J. H. Maiden (1919), commenting on the "Crossbreeding in Wattles", "In regard to the crossbreeding in wattles, an instance of which was reported yesterday from Dubbo, inclined to the opinion that the Dubbo cross between the black and Cootamundra wattles was performed by nature, and not by the hand of man." Maiden also stated, "The natural crossing of these two species has been observed for very many years, and pointed out that nearly 30 years previously the late Rev. Dr. Woolls, who first collected *Acacia Baileyana* in the garden of the late Mr. John Dalton, Solicitor, of Burwood, and who persistently told the late Baron von Mueller that it was undescribed, informed him (Maiden) that the Baron had hesitated to describe it because of the known intermediate forms of natural crosses, and this has been the experience of most people who have studied the subject."

Maiden also referred to the supposed cross between *Acacia Baileyana* and *Acacia decurrens* series brought under notice by Mr. H. L. White, of Belltrees, Scone, which were submitted to me for report in December, 1912. In furnishing my report to the late Mr. Maiden, I gave details of the structural characters of the supposed parents (*Acacia dealbata* and *Acacia Baileyana*), together with a description of the supposed hybrid. My original report on these three forms is in the official files of the National Herbarium of New South Wales (vide 7934/12), and copies are also deposited with the original suite of specimens contained in the herbarium. A description of the supposed hybrid was also forwarded to Mr. H. H. B. Bradley, Secretary of the Horticultural Society of New South Wales, and specimens were exhibited at the Monthly Meeting held on 13th May, 1913, which were labelled "Acacia H. L. White". An account of this new hybrid was also published in *Gardeners' Chronicle*, 4th October, 1913, p. 236, and further elaborated in the same journal, 1914, p. 262, with photographic illustrations of

the hybrid and supposed parents. At the July (1923) meeting of the Linnean Society of New South Wales, I exhibited a series of specimens of different stages of development of the F_1, F_2 and F_3 races of the supposed hybrid, which I had cultivated at Hill Top, on the Southern Line, 79 miles from Sydney. Specimens were also exhibited at the same meeting of a supposed hybrid collected by Mr. L. O. Gallard, at Carlingford and Epping, which, it was suggested, were very similar to *Acacia Nabonnandi*, which was probably the same as *Acacia adenophora* of Sprengel (1826) collected by Sieber in Port Jackson district in 1822.

It is of interest to note that Pescott (1914) has referred to the variability of the "Cootamundra Wattle", as will be seen from the following remarks: "Above all Acacias, *A. Baileyana* is noted for the variability of its seedlings, and it may be that this peculiar 'hybrid' is merely the result of the usual seed variation known among horticulturists as 'sporting'. It is hardly possible to plant a 'batch' of seed of *A. Baileyana* and find every resultant plant true to type. I have seen growing in Victoria a tree named by the grower *A. decurrens* var. *normalis*, who explained that this plant came up among some *A. Baileyana* seed. The tree was not *A. decurrens* var. *normalis* at all, but merely one of the 'rogues' that frequently come from *A. Baileyana* seed, and to call these 'hybrids' would be a great mistake. They are reversions, break aways, or sports." Pescott (1917) has also described a var. *aurea* of *Baileyana*, the young foliage of which is of a golden colour.

It has also been found by H. Ludwig Winter of Bordighera, Italy, that hybrids can be produced by pollinating two species of Acacias.

Acacia Bon accueil Richon (1927) is said to be a chance hybrid perhaps between *Acacia decurrens* and *A. dealbata*. It is reported that this is "one of the most beautiful acacias grown on the Riviera. The flower clusters have up to 40 heads, larger than the best varieties of *Acacia dealbata*. They are beautifully grouped at the ends of the branches. The leaves are bright green with long very fine leaflets. The tree is vigorous and about 20 feet high, but a little less hardy than *Acacia dealbata*."

Acacia Hanburyana, Gardeners' Chronicle (1927).—This is said to be a seedling discovered by Mr. Joseph Benbow when he was in charge of the La Mortola Gardens, Ventimiglia, Italy, growing in close proximity to bushes of *Acacia Baileyana* and *Acacia podalyriaefolia*, and there seems to be no doubt but that *Acacia Hanburyana* is the result of a natural cross between these two species. It makes a tree fully twenty feet high. The silvery phyllodes bear short leaflets similar to those of *Acacia Baileyana*, and the round clusters of bright canary-yellow flowers are borne on pendulous spikes.

Acacia Neufvillei and *Acacia Siebertiana* (1924) are supposed to be hybrids (probably chance hybrids) between *Acacia pycnantha* and *A. podalyriaefolia*.

The three distinctive forms of what is known as the *Acacia decurrens* series, collected by Mr. L. O. Gallard in the neighbourhood of North Rocks Road to Parramatta, Pennant Parade, Carlingford and Epping, together with the evidence furnished in connection with these forms growing in close proximity to *Acacia Baileyana* cultivated in gardens, seems to me to suggest that there is a possibility of *Acacia Baileyana* being pollinated with *Acacia decurrens*. Both species flower at the same time, and in the areas mentioned we find numerous plants of the form which agrees with the description given of *Acacia adenophora* Sprengel which was collected by Sieber, which, as I have already stated, agrees in every particular

with the illustration of the supposed hybrid *Acacia Nabonnandi* of Nash. We have also received seedlings raised from seed of *Acacia Baileyana* from the Campbelltown State Nursery, which agree in every particular with what I regard to be *Acacia adenophora* Sprengel.

Acacia adenophora Sprengel.—This species was originally described by Sprengel in 1826, from specimens collected in the Port Jackson district by Sieber, who made collections of Australian plants in the vicinity of Port Jackson to the Blue Mountains and Southern Tablelands during his visit in June, 1822, to January, 1823.

It is evident from Sprengel's Latin description, translated into English by Don (1832), that Sieber's specimens were regarded as being quite distinct from *Acacia decurrens* Willd. The latter is described as having leaves with 9–11 pairs of pinnae, each pinna bearing 30–40 pairs of narrow, linear, distant leaflets, with a gland on the rachis between each pair of pinnae, whereas the leaves of *Acacia adenophora* are described as having only 8 pairs of pinnae, each pinna bearing many pairs of linear, bluntish, glabrous leaflets. Sieber also collected specimens of *Acacia decurrens* and *Acacia irrorata* in the Port Jackson district, which he evidently regarded as being distinct, for we find that Sieber is quoted as the author of *A. irrorata* by Sprengel. Bentham (1864) regarded *Acacia adenophora* of Sprengel as a synonym of *Acacia decurrens* var. *normalis*, and *Acacia irrorata* of Sieber as a synonym of *Acacia dealbata* Link. There is a superficial resemblance between the two species *Acacia decurrens* of Willdenow and *Acacia adenophora* of Sieber, but, if a close examination is made, it will be found that the seedling stages of the two species present quite a different appearance, as the pinnae of the former are more widespread than the latter and the leaflets longer and narrower. It is interesting to note that Sieber described another species from the Port Jackson district, namely, *Acacia sulcipes*, which is included as a synonym under *Acacia angulata* Desv. by DeCandolle. Bentham lists all three species as synonyms under *Acacia decurrens* Willdenow var. *normalis*. When it is noted that Bentham also includes *Acacia irrorata* of Sieber as a synonym under *Acacia dealbata* and at the same time records the same plant as a variety of *Acacia decurrens* under the name var. *pauciglandulosa* F.v.M., it will be seen that there is room for doubt as to the classification of the various forms or so-called varieties of *Acacia decurrens*.

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